

CLAIMS

What is claimed is:

1. A method of controlling recording of data with respect to each track of a once-writable optical disc, comprising:
 - detecting whether a shock error occurs during recording of track information;
 - if the shock error is detected, stopping the recording of the track information and estimating a position where the recording of the track information has stopped;
 - recording dummy data from a backward position behind the estimated position, for a predetermined period of time; and
 - defining an error track from a start position of a track to a position where the recording of the dummy data has ended.
2. The method of claim 1, wherein in the definition of the error track, when table of contents (TOC) information is recorded in one of a pregroove management area and a lead-in area of the once-writable optical disc, a value of a field indicating a track number is set to a non-standard value.
3. The method of claim 1, wherein if the shock error occurs during recording of a first track information in a data area of the once-writable optical disc, the once-writable optical disc is treated as a blank disc.
4. The method of claim 1, wherein the dummy data corresponds to audio data with a value of 0.
5. The method of claim 4, wherein when the dummy data is recorded, sub channel data is constituted so that an absolute time, a relative time, and track information are consistent with those of previously recorded data.
6. The method of claim 1, wherein the shock error is detected by detecting whether several or several tens of tracks cross signals are instantaneously generated.

7. An apparatus controlling recording of data with respect to each track of a once-writable optical disc, comprising:

an encoder that encodes the data;

a laser driver that generates a drive signal corresponding to the encoded data;

an optical pickup that generates a laser signal in response to the drive signal, irradiates the laser signal onto the once-writable optical disc, receives the laser signal reflected from the once-writable optical disc, and generates a radio frequency signal;

a radio frequency amplifier that generates a track jump signal from the radio frequency signal, binarizes the radio frequency signal, and generates a reproduction signal;

an Absolute Time In Pregroove decoder that decodes Absolute Time In Pregroove information recorded on the once-writable optical disc, from the reproduction signal;

a shock detector that detects whether a shock error occurs, based on the track jump signal; and

a controller that, if the shock error is detected, stops a recording operation, estimates a position of the once-writable optical disc where the recording operation has stopped, with reference to the Absolute Time In Pregroove information, controls the optical pickup to record dummy data from a position after a predetermined period of time has elapsed from the estimated position, for a period of time and defines an error track from a start position of a track to a position where the recording of the dummy data has finished.

8. The apparatus of claim 7, wherein the controller allocates a non-standard value to a field indicating a track number of the error track, when table of contents (TOC) information is recorded in one of a pregroove management area and a lead-in area of the once-writable optical disc.

9. The apparatus of claim 7, wherein the dummy data corresponds to audio data with a value of 0.

10. The apparatus of claim 7, wherein when the dummy data is recorded, sub channel data is constituted so that an absolute time, a relative time, and track information are consistent with those of previously recorded data.

11. The apparatus of claim 7, wherein the shock detector detects the shock error by detecting whether several or several tens of tracks cross signals are instantaneously generated.

12. A method controlling recording of an optical disk, comprising:
determining whether a shock error has occurred during recording by detecting a track cross signal;
estimating a position where the recording has stopped;
recording dummy data at a predetermined period of time back from the estimated position where the recording has stopped;
recording track information in a Program Management Area (PMA) from a start portion of the position where the recording has stopped to a position where the recording of the dummy data ended.

13. The method of claim 12, wherein if the shock error occurs during recording of a first track information in a data area of the once-writable optical disc, the once-writable optical disc is treated as a blank disc.

14. The method of claim 12, wherein the dummy data corresponds to audio data with a value of 0.

15. The method of claim 14, wherein when the dummy data is recorded, sub channel data is constituted so that an absolute time, a relative time, and track information are consistent with those of previously recorded data.

16. The method of claim 12, wherein the shock error is detected by detecting whether several or several tens of tracks cross signals are instantaneously generated.

17. The method of claim 12, wherein the predetermined period of time includes a period during which data is not recorded due to an error.

18. An apparatus controlling recording of data onto an optical disc, comprising
an optical pickup receiving a signal reflected from the optical disc, and generating a radio frequency signal;

a radio frequency amplifier generating a track jump signal from the radio frequency signal;

a shock detector detecting whether a shock error occurs, based on the track jump signal; and

a controller that, if the shock error is detected, stops a recording operation, estimates a position of the optical disc where the recording operation has stopped, controls the optical pickup to record dummy data from the estimated position where the recording has stopped, records dummy data for a predetermined period of time onto the optical disc, and sets a track from a start position where the recording has stopped to a position where the recording of the dummy data has ended.

19. The apparatus of claim 18, wherein the controller allocates a non-standard value to a field indicating a track number of the error track, when table of contents (TOC) information is recorded in one of a pregroove management area and a lead-in area of the once-writable optical disc.

20. The apparatus of claim 18, wherein the dummy data corresponds to audio data with a value of 0.

21. The apparatus of claim 18, wherein when the dummy data is recorded, sub channel data is constituted so that an absolute time, a relative time, and track information are consistent with those of previously recorded data.

22. The apparatus of claim 18, wherein the shock detector detects the shock error by detecting whether several or several tens of tracks cross signals are instantaneously generated.

23. The apparatus of claim 18, wherein when the dummy data is recorded, an absolute time, a relative time, and track information are recorded in a sub Q track before the error occurs, so that the apparatus searches for the absolute time, the relative tie and the track information.

24. The apparatus of claim 18, wherein the controller estimates the position where the recording operation has stopped, with reference to Absolute Time In Pregroove (ATIP) information received before a shock error signal is generated.

25. The apparatus of claim 18, wherein the controller estimates the position where the recording operation has stopped, with reference to a start position of the track and a number of sectors and a number of frames which have been recorded until a shock error signal is generated.

26. A computer readable medium encoded with processing instructions for performing a method of controlling recording of data with respect to each track of a once-writable optical disc, the method comprising:

- detecting whether a shock error occurs during recording of track information;
- if the shock error is detected, stopping the recording of the track information and estimating a position where the recording of the track information has stopped;
- recording dummy data for a period of time, from a backward position behind the estimated position; and
- defining an error track from a start position of a track to a position where the recording of the dummy data has ended.

27. The computer readable medium of claim 26, wherein in the method, the definition of the error track, when table of contents (TOC) information is recorded in one of a pregroove management area and a lead-in area of the once-writable optical disc, a value of a field indicating a track number is set to a non-standard value.

28. The computer readable medium of claim 26, wherein in the method, if the shock error occurs during recording of a first track information in a data area of the once-writable optical disc, the once-writable optical disc is treated as a blank disc.

29. The computer readable medium of claim 26, wherein in the method, the dummy data corresponds to audio data with a value of 0.

30. The computer readable medium of claim 29, wherein in the method, when the dummy data is recorded, sub channel data is constituted so that an absolute time, a relative time, and track information are consistent with those of previously recorded data.

31. The computer readable medium of claim 26, wherein in the method, the shock error is detected by detecting whether several or several tens of tracks cross signals are instantaneously generated.

32. A method of controlling recording of data with respect to each track of a once-writable optical disc, comprising:

recording dummy data in a vicinity of a portion where a shock error appears, so that although recording is incomplete, a servo control signal enough to control a servo is obtained so as to normally carry out a servo operation of an the optical disc.